

ART. XXIX.—*On a New Silurian Bivalve from the Lilydale Quarries, Lucina (Prolucina) mitchelli.*

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(With Plate XXIX.).

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Lilydale is a well known locality for well-preserved fossils of very high antiquity, namely, silurian, and the Cave Hill Quarries have been yielding up their treasures to diligent searchers for quite a number of years. A glance at the list of fossils from this locality will, however, show that we have at present rather a scanty knowledge of its bivalved mollusean fauna, as the record includes only six species.

Any additional information should therefore be of some interest and value, and it is with pleasure that I now make the record of a new species.

During a recent visit to the Cave Hill Quarries, my assistant, Mr. Stanley R. Mitchell, had the good fortune to discover a very fine and perfect specimen of a large bivalve, which evidently belongs to the family *Lucinidae*. This specimen he has very kindly placed in my hands for description, and I take this opportunity of tendering him my thanks and of naming the species after him.

Lucina (Prolucina) mitchelli, sp. nov.

Description.—Shell orbicular, tumid, leak small, depressed, convexly rounded and situated at about one-third of the diameter from the anterior margin; lunule narrowly cordate, very small but distinct. Anterior margin regularly convexly rounded, from the lunule to the ventral margin, the latter becoming distinctly straighter as it reaches up to the posterior margin; posterior truncation makes an obtusely angular junction with the ventral margin of about 110 degrees, and runs obliquely upwards to join the convex posterior dorsal margin. The shell shows its greatest tumidity slightly to

the front of its centre line umbo-ventrally, but becomes notably flattened towards the anterior margin as well as towards the posterior keel. Posterior keel only faintly defined umbonally, but rapidly increasing in strength posteriorly, till it forms an exceptionally strong ridge margining the depressed posterior area. Shell surface finely concentrically sculptured, running about three ridges in two millimetres in the middle region, apparently raised into slight frills on the posterior keel; the frills are strongest post-ventrally, but the preservation of the specimen is not so perfect as to fully show the original extent of this feature. No radial marking is apparent. Interior of valve deeply concave umbonally and running out shallower towards the ventral margin, which is bevelled off to a general acute edge, with a suspicion of faint denticulation. The hinge has been cleared of matrix, but the cardinal teeth are evidently obsolete; there is a faint suspicion of an anterior lateral tooth, whilst to the posterior a broad shallow area for the reception of the internal ligament is margined by an elongated narrow ridge. Anterior adductor muscular scar very large, ovate, and showing a distinct and elevated callous rim towards the ventral margin, callous facing out dorsally. Posterior adductor muscular scar much smaller, narrowly elongate and margined anteriorly with a strong callous ridge. Pallial line entire and narrow. Internally there is some evidence of a radial structure which probably gave rise to a slight denticulation of the ventral margin, but this is not very distinctly preserved in the present specimen.

Dimensions.—Antero-posterior diameter, 68 mm.; umbo-ventral diameter, 62 mm.; greatest thickness through one valve, 15 mm.; thickness of shell about 2 mm.

Locality.—Cave Hill Quarries, Lilydale. Silurian limestone fauna. Collected by S. R. Mitchell.

I desire to express my best thanks to Mr. L. Knibbs for the photographs which illustrate this shell.

EXPLANATION OF PLATE XXIX.

Fig. 1. External view of valve, about two-thirds natural size.

Fig. 2. Internal view of valve, about two-thirds natural size.

Fig. 3. Umbonal aspect, a little less than natural size.